

Title (en)

Fluid structure interaction simulation method and apparatus, and computer-readable storage medium

Title (de)

Verfahren und Vorrichtung zur Flüssigkeitsstrukturinteraktionssimulation und computerlesbares Speichermedium

Title (fr)

Procédé et appareil de simulation d'interaction de structure fluide et support de stockage lisible sur ordinateur

Publication

**EP 2390802 A2 20111130 (EN)**

Application

**EP 11166806 A 20110519**

Priority

- US 34762310 P 20100524
- US 201113104495 A 20110510

Abstract (en)

A fluid structure interaction simulation method includes a graph information forming process to form graph information of nodes obtained by discretising a computing region for each of a fluid and a structure that are represented by meshes, and a main time development loop process to simulate a physical phenomenon. The loop process includes arranging IMEs (Interaction Mediating Elements) that move with a displacement of the structure, on a boundary of the structure, defining, within the IME, correcting functions of a pressure and a velocity of the fluid that interact with the pressure and the velocity of the fluid and the displacement of the structure, and executing a simulation based on the correcting functions, in a state in which the meshes of the fluid are mismatched to the meshes of the structure.

IPC 8 full level

**G06F 17/50** (2006.01)

CPC (source: EP US)

**G06F 30/20** (2020.01 - EP US); **G06F 30/23** (2020.01 - EP US); **G06F 30/28** (2020.01 - US); **G06F 2111/10** (2020.01 - EP US)

Citation (applicant)

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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2390802 A2 20111130**; **EP 2390802 A3 20150722**; JP 2011248878 A 20111208; JP 5737621 B2 20150617; US 10114911 B2 20181030; US 2011288834 A1 20111124

DOCDB simple family (application)

**EP 11166806 A 20110519**; JP 2011107604 A 20110512; US 201113104495 A 20110510